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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/287,307	04/07/1999	NORMAN K. SPROCH	0268P0342	6152

7590

05/13/2003

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EXAMINER

PHAN, THAI Q

ART UNIT

PAPER NUMBER

2123

DATE MAILED: 05/13/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

FR

# Office Action Summary

Application No.  
09/287,307

Applicant(s)  
Norman K. Sproch

Examiner  
Thai Phan

Art Unit  
2123



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Feb. 27, 2003
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

### **DETAILED ACTION**

This Office Action is in response to applicant's response filed on Feb. 27, 2003. Claims 1-18 are pending in this official action.

#### ***Drawings***

1. The drawings filed 04/07/99 are objected to by the draftsman (see PTO Form 948 attached in paper no. 4).

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Dunkel, patent no. 5,572,125.

As per claim 1, Dunkel discloses a method and system for analyzing and correcting simulation data to best fit to experimental data substantially similar to the claimed invention (Abstract and Summary of the Invention). According to Dunkel, the method includes steps of mixing molecules to form a mixed solution of complex molecules for analysis, performing electrospray ionization mass spectrometry to obtain spectroscopic data of the molecule complexes (Background of the Invention, col. 1, lines 15-21, Summary of the Invention, cols. 15-19, 25-26, col. 29, lines 1-12, cols. 33-37), and repeating the procedure steps above if necessarily in order to obtain a good resolution for characterizing 3-D structure molecules (col. 1, lines 15-21, cols. 15-19, col. 20, lines 24-39, cols. 21-22, col. 25, lines 17-39, col. 26, lines 29-44, cols. 33, 36-37, for example).

As per claim 2, Dunkel anticipated computerized data processing system including plurality of means for performing steps, such as processing means for computing error data, phase shift data, etc., memory for storing computation results, as claimed (cols. 21-22, 25, 26, and 32-33). Dunkel also anticipates simulating the model to predict error and correct the model using feedback loop as claimed (col. 33, line 56 to col. 36, line 58) .

As per claims 3-6, Dunkel anticipates a variety of complex molecules such as cholesterol, proteins and protein complex structures, etc. as claimed.

As per claim 7, Dunkel discloses a method and system for analyzing and correcting simulation data to best fit to experimental data substantially similar to the claimed invention

(Abstract and Summary of the Invention). According to Dunkel, the method includes steps of mixing molecules to form a mixed solution of complex molecules for analysis, performing electrospray ionization mass spectrometry to obtain spectroscopic data of the molecule complexes (col. 1, lines 15-21, Summary of the Invention, cols. 15-19, col. 33, lines 56-67, cols. 33-37), Dunkel also anticipates bonding strength based on spectroscopic data in simulation model (col. 20, lines 40-63, col. 26, lines 29-45, col. 28, lines 56-67, for example) which would include bonding strength, bond energy, etc. as known for those skilled in the spectroscopy analysis. Dunkel also anticipates data model being corrected to improve a selected residue on the molecule, and repeating the procedure steps above if necessarily in order to obtain a good resolution for characterizing 3-D structure molecules (cols. 15-19, col. 20, lines 24-39, cols. 21-22, col. 25, lines 17-39, for example).

As per claim 8, due to the similarity of claim 8 to claim 2, claim 8 is also rejected under the same rationales as set forth..

As per claims 9-15, Dunkel anticipates complex molecules under spectroscopy analysis and simulation method using such data model to predict complex structures of the molecules. They would include a list of molecules as claimed.

As per claim 16, Dunkel anticipates bonding strength or binding energy of complex molecules such energy required to create a bond which would inherently include heat of formation in the complex large molecules as claimed.

As per claims 17-18, Dunkel discloses a plurality of complex molecules which would include and not limited to the claimed invention.

***Response to Arguments***

4. Applicant's arguments filed Feb. 27, 2003 have been fully considered but they are not persuasive.

In response to applicant's argument Dunkel does not describe method of electrospray ionization mass spectrometry to obtain the spectrum of the molecule complex (singular form not plural form as applicant argued) (see page 2, paragraph 2, last line), the examiner disagrees with. Dunkel used mass spectrometry with ion charges to measure or characterize complex molecules having molecule complexity (Field of the Invention, col. 1, lines 15-21, col. 36, line 29 to col. 37, line 11).

In response to applicant's argument Dunkel does not relate to characterize or model 3-D structure of a molecule being analyzed (page 3, second paragraph), the examiner disagrees with. Dunkel anticipated method for modeling a 3-D structure of a molecule being analyzed (Background of the Invention, col. 1, lines 15-21, cols. 33-37, for example).

In response to applicant's argument independent claims 1 and 7 specifically recite molecule complexes (page 4, paragraph 1), the examiner responds such argued feature of "molecule complexes" is not in the claim limitations.

In response to applicant's argument Dunkel failed to characterize 3-dimensional structure of the molecule (page 5), the examiner disagrees with. Dunkel uses ion cyclotron mass spectrometry (or electrospray ionization mass spectrometry as claimed) to model or characterize 3-dimensional object (col. 1, lines 15-21, col. 2, line 1-14).

In response to applicant's argument Dunkel does not disclose residue in a chain of amino acids (page 7), the examiner responds such argued feature is not in the functional language of claim 1, for example.

In response to applicant's argument Dunkel is not simulating the model (page 9, paragraph 2), the examiner responds such argued feature is not in the claim limitation.

In response to applicant's argument Dunkel does not allow for any manipulation or modification of the chemical system being analyzed prior to, during, or after the simulation (page 9, last paragraph), the examiner would like to point out such functional language is not in the claim, and also respond that Dunkel used spectrometry with ion cyclotron mass to spectrolyte or analyze chemical molecule structure having a complexity structure (see Background of the Invention). Such process would inherently imply manipulation of chemical system as applicant argued.

In response to applicant's argument Dunkel does not provide molecule complexes (page 10, paragraph 2), the examiner would like to point out such feature is not in the claimed functional language. The examiner also responds Dunkel discloses complex molecules having molecular complexity such molecules include but not limited to proteins, polymers, polypeptides, etc as well-known in the related art for structure analysis.

In response to applicant's argument Dunkel does not dealt with protein sequencing invariably involves the analysis of a series of small polypeptide fragments (page 10, last paragraph to page 11, paragraph 1), the examiner would like to point out such argued feature herein is not well presented in the functional claim languages.

***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai Phan whose telephone number is (703) 305-3812.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703)305-3900.

**Any response to this final action should be mailed to:**

**Box AF**

Commissioner of Patents and Trademarks

Washington, D.C. 20231



**or faxed to:**


(703) 746-7238, (for Formal communications; please mark "EXPEDITED  
PROCEDURE"),

**Or:**

(703) 746-7239 (for Unofficial Fax communications, please label  
"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal  
Drive, Arlington. VA., Sixth Floor (Receptionist).

May 8, 2003

  
**SAMUEL BRODA, ESQ.**  
**PRIMARY EXAMINER**